

TRANSMITTAL

PTO/SB/21 (08-00)

09/881,526

type a plus sign (1740) box -> + Approved for use through 10/31/02. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

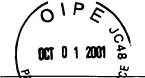
Application Number

50011		Filing Date	June 14, 2001		
FORM		First Named Inventor	H. Ralph SNODGRASS		
		Group Art Unit	1632		
(to be used for all corres	pondence after initial filing)	Examiner Name	To Be Assigned		
Total Number Of Pages In This Submission 18 + 114 REFS.		Attorney Docket No.	441472000500		
	ENCLOSURES (check all that apply)				
Fee Transmittal Form		ssignment Papers or an Application)	After Allowance Communicatio Group	n to	
Fee Attached	d Di	awing(s)	Appeal Communication to Boar Appeals and Interferences	rd of	
Amendment / Reply	Li	censing-related Papers	Appeal Communication to Grou (Appeal Notice, Brief, Reply Brief)	ηp	
After Final	Pe	etition	Proprietary Information		
Affidavits/dee	ciarations I I	etition to Convert to a ovisional Application	Status Letter		
		ower of Attorney, Revocation ange of Correspondence Address Delow):		ify	
		erminal Disclaimer	Form PTO-1449 (7 pages in duplica Copies of 114 cited references Return Receipt Postcard	ite)	
Express Abandonme	ent Request Re	equest for Refund	,		
Information Disclosu pages)	re Statement (3	D, Number of CD(s)			
Certified Copy of Pri	ority Document(s) Remarks				
Response to Missing Incomplete Application					
	Missing Parts R 1.52 or 1.53				
	SIGNATURE OF	APPLICANT, ATTORN	NEY OR AGENT		
Firm		ge Mill Road, Palo Alto, CA 94304			
or Individual Name	Cara Coburn, Reg. No. 46,631				
Signature	Cana Como	n			
Date	September 20, 2001				
			·		

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on September 20, 2001. Martina Placid

CERTIFICATE OF MAILING BY "FIRST CLASS MAIL"

Burden Hours Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.



Form PTO-1449 INFORMATION DISCLOSURE CITATION

IN AN APPLICATION

(Use several sheets if necessary)

	Dilect I of 7
Docket Number 441472000500	Application Number 09/881,526
Applicant	
H. Ralş	oh SNODGRASS
Filing Date June 14, 2001	Group Art Unit 1632
Mailing Date Sentember 20, 2001	

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
	1.	05/08/1979	4,153,676	Jelinek et al.			
	2.	11/24/1992	5,166,065	Williams et al.			
	3.	02/06/1993	5,187,077	Gearing et al.			
	4.	03/30/1993	5,197,985	Caplan et al.			
	5.	07/12/1994	5,328,695	Lucas et al.	1 1 1		
	6.	01/23/1996	5,486,359	Caplan et al.			
	7.	09/24/1996	5,559,022	Naughton et al.			
	8.	11/19/1996	5,576,207	Reid et al.			
· · ·	9.	08/26/1997	5,660,986	Harris et al.		_	
-,	10.	09/23/1997	5,670,372	Hogan			
	11.	11/11/1997	5,686,272	Marshall et al.			
	12.	01/06/1998	5,705,365	Ryder et al.			
	13.	11/25/1997	5,690,926	Hogan et al.			
	14.	04/07/1998	5,736,332	Mandecki			
	15.	04/07/1998	5,736,396	Bruder et al.			
	16.	08/04/1998	5,789,246	Reid et al.			
	17.	09/01/1998	5,800,690	Chow et al.			
	18.	09/15/1998	5,807,680	Sutcliffe et al.			
	19.	09/22/1998	5,811,231	Farr et al.			
	20.	09/29/1998	5,814,445	Belyavsky et al.			
	21.	10/27/1998	5,827,735	Young et al.			
	22.	10/27/1998	5,827,740	Pittenger			
	23.	01/19/1999	5,861,313	Pang et al.			
	24.	12/28/1999	6,007,993	Wobus et al.			
-	25.	03/07/2000	6,033,860	Lockhart et al.			
	26.	03/21/2000	6,040,138	Lockhart et al.			

EXAMINER:	DATE CONSIDERED:	

Form PTO-1449

INFORMATION ENGLISHER CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 441472000500 Application Number 09/881,526

Applicant

H. Ralph SNODGRASS

Filing Date June 14, 2001

Group Art Unit 1632

Mailing Date September 20, 2001

27.	05/30/2000	6,069,005	Reid et al.		
28.	09/09/2001	6,171,858 B1	Hölzle et al.		

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Trans YES	lation NO
	29.	11/22/1994	JP 06,319,535	Japan			Abstract	
	30.	05/30/1996	WO 96/16162	PCT				
	31.	07/25/1996	WO 96/22362	PCT				
	32.	01/16/1997	WO 97/01644	PCT				
	33.	04/17/1997	WO 97/13877	PCT				
	34.	05/01/1997	WO 97/15690	PCT				
	35.	08/28/1997	DE 19606207 A1	Germany			Abstract	
	36.	12/18/1997	WO 97/47734	PCT				
	37.	02/26/1998	WO 98/07841	PCT				
	38.	07/07/1998	JP 10,179,150	Japan			Abstract	
	39.	01/20/2000	WO 00/03001	PCT .				

OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

		OTHER DOCUMENTS (including author, title, Date, Pertinent Pages, Etc.)
Examiner Initials	Ref. No.	Title
	40.	Barany, (1991) "Genetic Disease Detection and DNA Amplification Using Cloned Thermostable Ligase." <i>Proc. Natl. Sci. USA 88:189-193.</i>
	41.	Becker, S. et al. (1992). "Localization of Endoderm-Specific mRNAs in Differentiating F9 Embryoid Bodies, <i>Mechanisms of Development</i> 37:3-12.
	42.	Bichet, S. et al. (1999). "Oxygen Tension Modulates β-Globin Switching in Embroid Bodies", FASEB J. 13:285-295.
	43.	Bielinska, M. et al. (1997). "Induction of Yolk Sac Endoderm in GATA-4-Deficient Embryoid Bodies by Retinoic Acid", <i>Mechanisms of Development</i> 65:43-54.
	44.	Blouin et al., (1992) "Cytokeratin 14 expression in rat liver cells I culture and localization in vivo." Differentiation 52:45-54.
	45:	Brill et al., (1994) "Extracellular Matrix Regulation of Growth and Gene Expression in Liver Cell Lineages and Hepatomas" in <u>The Liver Biology and Pathobiology</u> pp. 869-897. (Arias et al., Third

EXAMINER:

DATE CONSIDERED:

PTO/SB/08 (2-92) Sheet 3 of 7

Form PTO-1449

INFORMATION DISCLOSURE CITATION

IN AN APPLICATION

(Use several sheets if necessary)

Filing Date June

Docket Number 441472000500 Application Number 09/881,526

Applicant

H. Ralph SNODGRASS

Filing Date June 14, 2001 Group Art Unit 1632

Mailing Date September 20, 2001

	Edition, Raven Press, NY)
46.	Brill et al., (1995) "Maturation-dependent changes in the regulation of liver-specific gene expression in embryonal versus adult primary liver cultures." Differentiation 59:95-102.
47.	Brill et al., (1999) "Expansion Conditions for Early Hepatic Progenitor Cells from Embryonal and Neonatal Rat Livers." Digestive Diseases & Sciences 44:364-371.
48.	Bruchez et al., (1998) "Semiconductor Nanocrystals as Fluorescent Biological Labels." Science 281:2013-2016.
49.	Chan and Nie, (1998) "Quantum Dot Bioconjugates for Ultrasensitive Nonisotopic Detection." Science 281:2016-2018.
50.	Doetschman, T. C. et al. (1985). "The <i>In Vitro</i> Development of Blastocyst-Derived Embryonic Stem Cell Lines: Formation of Visceral Yolk Sac, Blood Islands and Myocardium," <i>J. Embryol. Exp. Morph.</i> 87:27-45.
51.	Duncan, W.A. (1967). "Species Variation in Drug Metabolism", Advancement of Science 23(116):537-541.
52.	Fiorino et al., (1998) "Maturation-Dependent Gene Expression in a Conditionally Transformed Liver Progenitor Cell Line." <i>In Vitro Cell. Dev. BiolAnimal</i> 34:247-258.
 53.	Gajovic S. et al. (1998). "Genes Expressed After Retinoic Acid-Mediated Differentiation of Embroyoid Bodies are Likely to Be Expressed during Embryo Development". Experimental Cell Research 242:138-143.
 54.	Gall and Bhathal, (1990) "Development of intrahepatic bile ducts in rat foetal liver explants in vitro." J. Exp. Pathol. 71:41-50.
55.	Garcia-Sanz, M. et al. (1996). "Multiparametric Analysis of Cell Differentiation in Teratocarcinoma Embryoid Bodies", <i>Alterations in Development</i> 279S-280S.
56.	Germain et al., (1988) "Biliary Epithelial and Hepatocytic Cell Lineage Relationships in Embryonic Rat Liver as Determined by the Differential Expression of Cytokeratins, α-Fetoprotein, Albumin, and Cell Surface-expopsed Components." <i>Cancer Res.</i> 48:4909-4918.
57.	Ghiglione, C. et al. (1996). "Early Gene Expression along the Animal-Vegetral Axis in Sea Urchin Embryoids and Grafted Embryos", <i>Development 122:3067-3074</i> .
58.	Gray, N.S. et al. (1998). "Exploiting Chemical Libraries, Structure, and Genomics in the Search for Kinase Inhibitors," <i>Science</i> 281:533-538.
59.	Grisham and Thorgeirsson, (1997) "Liver stem cells" <u>Stem Cells</u> pp. 233-282. (Academic Press, London)
60.	Harlow and Lane, (1988) Antibodies, A Laboratory Manual (Cold Spring Harbor Laboratory, Cold Spring Harbor, NY), pp. iii-ix (Table of Contents).
61.	Hogan, B. et al., eds. (1986). <u>Manipulating the Mouse Embryo: A Laboratory Manual.</u> Cold Spring Harbor Laboratory Press: Cold Spring Harbor, NY., pp. vii-ix (Table of Contents).

EXAMINER:

DATE CONSIDERED:

PTO/SB/08 (2-92) Sheet 4 of 7

OT 0 1 2001 &

Form P1U-1449	(E)	.Æ	
rom P10-1449 INFORMATIO	N DISCL	ASSENBLE C	ITATION
IN A	N APPLIO	CATION	

(Use several sheets if necessary)

	Sheet (et)					
Docket Number 441472000500 Application Number 09/881,526						
Applicant						
H. Ra	lph SNODGRASS					
Filing Date June 14, 2001	Group Art Unit 1632					
Mailing Date Sentember 20, 2001						

,	, ,,	, , ,	•			
		Mailing Date September 20, 2001				
- 			· · · · · · · · · · · · · · · · · · ·			
62.	Innis et al., eds. (1990) PCR Protocols San Diego, CA., pp. v-x (Table of Cor		ications. Academic Press, Inc.,			
63.		Keller, G. et al. (1993). "Hematopoietic Commitment During Embryonic Stem Cell Differentiation i Culture," <i>Molecular and Cellular Biology</i> 13:473-486.				
64.	Klaassen et al., eds. (1996). Casarett a Edition, McGraw-Hill: New York, NY					
65.	Krah, K. (1994). "Induction of Vascul Developmental Biology 164:123-132.	logenesis in Quail Blastodic-Der	rived Embryoid Bodies",			
66.	Kyuwa, S et al. (1997). "Characterizat Embryoid Bodies', Exp. Anim. 46(1): I		ll Lines Derived from			
67.	Landegren et al., (1988) "A Ligase-Me	ediated Gene Detection Techniq	ue." Science 241:1077-1080.			
68.		Leahy, A. et al. (1999). "Use of Developmental Marker Genes to Define Temporal and Spatial Patterns of Differentiation During Embryoid Body Formation", Journal of Experimental Zoology				
69.	Levenson et al., (1990), "Nonisotopica Methods and Applications. Innis et al.,					
70.	Ling, V. et al. (1997). "In Vitro Differ of Cultured Embryoid Bodies", <i>Journal</i>					
71.	Ling, V. et al. (1998). "Embryonic Stem Cells and Embryoid Bodies Express Lymphocyte Costimulatory Molecules", Experimental Cell Research 241:55-65.					
72.	Maier, E. et al. (1997). "Automated An Discovery Today 2(8):315-324.	rray Technologies for Gene Exp	ression Profiling," Drug			
73.	Maier, P. (1988). "Development of In Hepatocytes", Experientia 44(10):807		res of Freshly Isolated Rat			
74.	Marceau (1990) "Biology of Disease: Urothelial and Hepatic Tissues and Th					
75.	Marshall. (November 6, 1998). "A Ver Science 282:1014-1015.	rsatile Cell Line Raises Scientifi	c Hopes, Legal Questions,"			
76.	McCormick et al. (1997). "Microchant Plastic Substrates", Analytical Chemis		of DNA in Injection-Molded			
77.	Moll et al., (1982) "The Catalog of Hu Tumors and Cultured Cells." Cell 31:1		expression in Normal Epithelia,			
78.	Monzo, M. et al. (1992). "Effect of A From Teratocarcinoma", Histology and		o of Embryoid Bodies Derived			
79.	Morini, M. et al. (1999). "Localization of F9 Teratocarcinoma Cells", Experim					
EXAMINED:		DATE CONSIDERED:				

EXAMINER:

DATE CONSIDERED:

PTO/SB/08 (2-92) Sheet 5 of 7

OT 0 1 2001 &

Form PTO-1449

INFORMATION DISCISSION IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 441472000500

Application Number 09/881,526

Applicant

H. Ralph SNODGRASS

Filing Date June 14, 2001

Group Art Unit 1632

	Mailing Date September 20, 2001
80.	Osborn and Weber, (1982) "Intermediate Filaments: Cell-type-specific Markers in Differentiation and
81.	Pathology." Cell 31:303-306. Park, J.I. et al. (1998). "Differentiative Potential of a Mouse Parthenogenetic Embryonic Stem Cell
	Line Revealed by Embryoid Body Formation In Vitro", Jpn. J. Vet. Res. 46(1):19-28.
82.	Pittenger et al. (1999). "Multilineage Potential of Adult Human Mesenchymal Stem Cells", Science 284:143-147.
83.	Reid (1997) "Chapter 31: Stem Cell/Lineage Biology and Lineage-Dependent Extracellular Matrix Chemistry: Keys to Tissue Engineering of Quiescent Tissues such as Liver." Principles of Tissue Engineering (R.P. Lanza/Academic Press, Austin TX), pp. 481-514.
84.	Reid and Luntz, (1997) "Ex vivo maintenance of differenteiated mammalian cells" <i>Basic Cell Culture Protocols</i> 75:31-57. (Humana Press, Totwa, NJ).
85.	Robertson, E. J. (1987). "Embryo-Derived Stem Cell Lines," Chapter 4 In <u>Teratocarcinomas and Embryonic Stem Cells: A Practical Approach</u> . Robertson, E., ed., IRL Press: Washington, DC., pp. 71-112.
86.	Robertson, E. J. et al. (1986). "Germ-Line Transmission of Genes Introduced into Cultured Pluripotential Cells by Retroviral Vector," <i>Nature 323:445-448</i> .
87.	Sambrook et al., (1989) Molecular Cloning, A Laboratory Manual. 2nd ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY., pp. xi-xxxviii (Table of Contents.)
88.	Sanchez, A. et al. (1991). "Myosin Heavy Chain Gene Expression in Mouse Embryoid Bodies", Journal Biological Chemistry 266(33):22419-22426.
89.	Schmitt et al. (1991). "Hematopoietic Development of Embryonic Stem Cells In Vitro: Cytokine and Receptor Gene Expression," <i>Genes and Developments</i> 5:728-740.
90.	Service, R. (1998). "Microchip Arrays Put DNA on the Spot," Science 282:396-399.
91.	Shalon et al. (1996). "A DNA Microarray System for Analyzing Complex DNA Samples Using Two-Color Fluorescent Probe Hybridization," <i>Genome Research</i> 6:639-645.
92.	Shamblott et al. (1998). "Derivation of Pluripotent Stem Cells from Cultured Human Primordial Germ Cells," <i>Proceedings of the National Academy of Science USA 95:13726-13731</i> .
93.	Shim et al. (1997). "Isolation of Pluripotent Stem Cells from Cultured Porcine Primordial Germ Cells," <i>Biology of Reproduction</i> 57:1089-1095.
94.	Shiojiri and Mizuno, (1993) "Differentiation of functional hepatocytes and biliary epithelial cells from immature hepatocytes of the fetal mouse in vitro." <i>Anat. Embryol</i> 187:221-229.
95.	Shiojiri et al., (1991) "Cell Lineages and Oval Cell Progenitors in Rat Liver Development." Cancer Res. 51:2611-2620.
96.	Snodgrass et al. (1993). "Embryonic Stem Cells: Research and Clinical Potentials," <i>In</i> Peripheral Blood Stem Cells. Smith et al. eds., American Association of Blood Banks: Bethesda, MD., pp. 65-83.

EXAMINER:

DATE CONSIDERED:

PTO/SB/08 (2-92) Sheet 6 of 7

OTP & CO 1 2001 &

Form PTO-1449
INFORMATION DISCLOSURE CITATION

IN AN APPLICATION
(Use several sheets if necessary)

Docket Number 441472000500

Application Number 09/881,526

Applicant

H. Ralph SNODGRASS

Filing Date June 14, 2001

Group Art Unit 1632

	(Use several sheets if necessary)		Filing Date June 14, 2001	Group Art Unit 1632		
			Mailing Date September 20, 2001			
	97.	Thomson et al. (1996). "Pluripotent Cell Lines Derived from Common Marmoset (Callithrix jacchus) Blastocytes," Biol. Reprod. 55:254-259.				
	98.	Thomson et al. (1998). "Embryonic Stem Cell Lines Derived from Human Blastocysts," Science 282:1145-1147.				
	99.	Thomson et al. (1998). "Primate Embryonic Stem Cells," Chapter 4, Volume 38 In Current Topics in Developmental Biology. Pedersen et al. eds., Academic Press: San Diego, CA., pp. 133-165.				
	100.	Todaro et al. (1963). "Quantitative Studies of The Growth of Mouse Embryo Cells in Culture and Their Development Into Established Lines," <i>J. Cell. Biol.</i> 17:299-313.				
	101.	Unda, F.J. et al. (1994). "Co-Expression of Laminin and a 67 kDa Laminin-Binding Protein in Teratocarcinoma Embryoid Bodies", <i>Int J. Dev. Biol.</i> 38:121-126.				
102		Velculescu, V. E. et al. (1995). "Serial Analysis of Gene Expression," Science 270:484-487.				
	103.	Wang, R. et al. (1992). "Embryonic Stem Cell-Derived Cystic Embryoid Bodies Form Vascular Channels: an <i>In Vitro</i> Model of Blood Vessel Development", <i>Development 114:303-316</i> .				
-	104.	Ware, L. M. et al. (1972). "Inherited Resistance to N- and B-Tropic Murine Leukemia Viruses <i>In Vitro</i> : Evidence That Congenic Mouse Strains SIM and SIM.R Differ at the Fv-1 Locus," <i>Virology</i> 50:339-348.				
,	105.	Wartenberg, M. et al. (1998). "The Embryoid Body as a Novel in Vitro Assay System for Antiangiogenic Agents", Laboratory Investigation 78(10):1301-1314.				
	106.	Williams, (1978). "Species Variations in the Pathways of Drug Metabolism," Environ. Health Perspect. 22:133-138.				
	107.	Wu et al. (1989). "The Ligation Amplification Reaction (LAR)Amplification of Specific DNA Sequences Using Sequential Rounds of Template-Dependent Ligation." Genomics 4:560-569.				
	108.	Xiong, J.W. et al. (1998). "Large-Scale Screening for Developmental Genes in Embryonic Stem Coand Embryoid Bodies Using Retroviral Entrapment Vectors", <i>Developmental Dynamics</i> 212:181-1				
:-	109.	Yamada, G. et al. "Regulated Expressi Bodies", Biochemical and Biophysical				
	110.	Young, H. E. et al. (1988). "Initial Cl Embryonic Chick Leg Muscle-Associa 118.	haracterization of Small Proteogated Connective Tissues", Connective Tissues	lycans Synthesized by ective Tissue Research 17:99-		
	111.	Young, H. E. et al. (1991). "Cryopreson Stem Cells", J. Tiss. Cult. Meth. 13:2		yogenic Lineage-Committed		
	112.	Young, H. E. et al. (1992). "Isolation J. Tiss. Cult. Method 14:85-92.	of Embryonic Chick Myosatelli	te and Pluripotent Stem Cells"		
	113.	Young, H.E. et al. (1999). "Human Pl Differentiation Markers CD10, CD13,				

EXAMINER:

DATE CONSIDERED:

OT 0 1 2001 &

10111110-1419	(W	270	
INFORMATIO	N DISCU	DOMNE CI	TATION
IN A	N APPLI	CATION	

(Use several sheets if necessary)

Docket Number 441472000500	Application Number 09/881,526	

Applicant

H. Ralph SNODGRASS

Filing Date June 14, 2001

Group Art Unit 1632

Mailing Date September 20, 2001

114. Zhang, L. et al. (1997). "Gene Expression Profiles in Normal and Cancer Cells," Science 276:1268-

EXAMINER:

DATE CONSIDERED: